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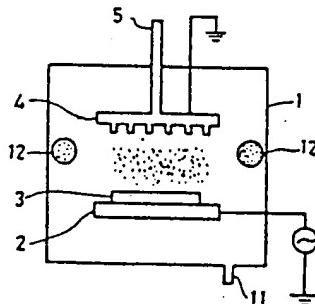
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(54) PLASMA TREATMENT

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PURPOSE: To accelerate decomposition of reaction gas by a method wherein reaction gas in a vacuum chamber provided with a semiconductor substrate is made to the plasma condition, light thereof is radiated to gas in sealed tubes to excite sealed gas, and light generated therefrom is irradiated to reaction gas.

CONSTITUTION: An Si substrate 3 to be formed with an SiO_2 film is set on a substrate setting base 2 in a reaction vessel 1. After then, the reaction vessel 1 is exhausted to a vacuum according to an exhaust hole 11. Reaction gas consisting of mixed gas of SiH_4 gas and O_2 gas is introduced from a gas introducing hole 5 communicating with an electrode 4 provided mutually facing with the substrate setting base 2. A high-frequency voltage is applied between the substrate setting base 2 and the electrode 4 to make introduced reaction gas to the plasma condition. At this time, sealed tubes 12 sealing mercury vapor are provided previously in the vessel 1. When plasma is generated, mercury vapor is excited to radiate light of high energy in plasma. Accordingly, decomposition of reaction gas is accelerated the more.



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